Air Quality Permit

Issued To: Rocky Mountain Power, Inc. Hardin Generating Station P.O. Box 5558 Bismarck, ND 58506-5558	Permit #3185-03 Application Complete: 12/20/05 Preliminary Determination Issued: 12/21/05 Department Decision Issued: 01/06/06 Permit Final: 01/24/06 AFS Number: 003-0018

An air quality permit, with conditions, is hereby granted to Rocky Mountain Power, Inc. (RMP) pursuant to Sections 75-2-204 and 211, Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

RMP submitted Permit Application #3185 to construct and operate a stationary facility to produce electrical power for delivery to the existing power grid located in the Northwest ¼ of Section 12, Township 1 South, Range 33 East, in Big Horn County, Montana. The proposed facility will consist of a pulverized coal-fired (PC-fired) boiler and a steam turbine, which will drive a 135 MVA class nameplate electric generator to produce a nominal 116-gross megawatts (MW) of electric power (about 11-MW of the power produced will be used on average for plant auxiliary power). A complete list of the permitted equipment for the coal-fired steam-electric generating station is contained in the permit analysis.

B. Current Permit Action

On December 20, 2005, the Department of Environmental Quality (Department) received a complete permit application from RMP to add a temporary auxiliary 11.8 million British thermal units per hour (MMBtu/hr) boiler necessary for startup of the PC-fired Boiler (Boiler). The temporary auxiliary boiler would be used to provide supplemental heat when the PC-fired Boiler is operating on natural gas for activities such as steam blows or freeze protection during tuning or startup of the Boiler. Once startup has progressed to the point that the Boiler is fired on coal, there will be no need for the auxiliary boiler. The auxiliary boiler would not be operated at the same time the Boiler is combusting coal, therefore overall potential emissions at the facility would not increase.

Section II: Limitations and Conditions

A. General Plant Requirements

1. RMP shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over six consecutive minutes (ARM 17.8.304).

2. RMP shall not cause or authorize emissions to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant property without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

3. RMP shall treat all unpaved portions of the access roads, parking lots, and general plant area with chemical dust suppressant and/or clear, non-oily water which does not contain regulated hazardous waste as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.2 (ARM 17.8.749).

4. The annual heat input to the Boiler shall not exceed 11,423,040 million British thermal units (MMBtu) per rolling 12-month time period (ARM 17.8.749).

5. RMP shall comply with all applicable standards and limitations, and the reporting, monitoring, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart Da (ARM 17.8.340 and 40 CFR 60, Subpart Da).

6. RMP shall comply with all applicable standards and limitations, and the reporting, monitoring, recordkeeping, testing, and notification requirements contained in 40 CFR 60, Subpart Y (ARM 17.8.340 and 40 CFR 60, Subpart Y).

7. RMP shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements of the Acid Rain Program contained in 40 CFR 72-78 (40 CFR 72-78).

B. PC-fired Boiler (Boiler)

1. CO emissions from the Boiler shall be controlled by proper design and combustion. CO emissions from the Boiler stack shall not exceed 0.15 lb/MMBtu (ARM 17.8.752).

2. NO_x emissions from the Boiler shall be controlled by selective catalytic reduction (SCR). NO_x emissions from the Boiler stack shall not exceed 0.09 lb/MMBtu based on a 30-day rolling average (ARM 17.8.752).

3. SO_2 emissions from the Boiler shall be controlled with the use of a dry flue gas desulfurization (FGD) system, specifically characterized as a Spray Dry Absorber (SDA) (ARM 17.8.752).

   a. SO_2 emissions from the Boiler stack shall not exceed 182.6 lb/hr based on a 1-hour average (ARM 17.8.749).

   b. For 18 months following commencement of commercial operations ("SO_2 Optimization Period") (the emission limits in this subsection (b) are established for this SO_2 Optimization Period, and are not intended to be relied upon as an SO_2 BACT determination)(BER order signed on May 6, 2005):

      i. SO_2 emissions from the Boiler stack shall not exceed 0.12 lb/MMBtu based on a 30-day rolling average.

      ii. The control efficiency for the SO_2 emission control equipment shall be maintained at a minimum of 90% based on a 30-day rolling average (as measured according to 40 CFR 60.47a(b)).

      iii. Except for the limit set forth in Section III.B.3.a, above, exceedances of the SO_2 emission limit associated with the atomizer change out or startup and shutdown activities (as defined in 40 CFR 60.2) during the SO_2 Optimization Period are not violations of the emission limit set forth above provided:

(a) Exceedances of the SO_2 emission limit associated with atomizer change out and the startup and shutdown activities constitute no more than 36 hours during the affected 30-day rolling period and no more than 260 hours during the 18-month period;

(b) SO_2 emissions do not exceed 0.14 lb/MMBtu based on a 30-day rolling average; and

(c) RMP maintains and operates the equipment and control technology in a manner that is consistent with good practices for minimizing emissions.

c. After the SO_2 Optimization Period:

i. SO_2 emissions from the Boiler stack shall not exceed the SO_2 BACT limit of 0.11 lb/MMBtu based on a 30-day rolling average (ARM 17.8.752), unless RMP submits an application to the Department for a modification to the SO_2 BACT limit and, after the applicable review process, it is demonstrated through data and information gathered during the SO_2 Optimization Period that a different SO_2 BACT limit is necessary, in which case the SO_2 BACT limit shall be adjusted accordingly (BER order signed May 6, 2005).

ii. The control efficiency for the SO_2 emission control equipment shall be maintained at a minimum of 92% based on a 30-day rolling average (as measured according to 40 CFR 60.47a(b)) (ARM 17.8.752), unless RMP submits an application to the Department for a modification to the control efficiency for SO_2 emission control equipment and, after the applicable review process, it is demonstrated through data and information gathered during the SO_2 Optimization Period that a different control efficiency for SO_2 emission control equipment is necessary, in which case the control efficiency for SO_2 emission control equipment shall be adjusted accordingly (BER order signed May 6, 2005).

4. PM/PM_{10} emissions from the Boiler shall be controlled with the use of a fabric filter baghouse (FFB) (ARM 17.8.752).

a. For the 18 months following commencement of commercial operations ("PM/PM_{10} Optimization Period"), the filterable PM/PM_{10} emissions from the Boiler stack shall not exceed 0.015 lb/MMBtu (BER order signed May 6, 2005). After the PM/PM_{10} Optimization Period, PM/PM_{10} emissions from the Boiler stack shall not exceed the filterable PM/PM_{10} BACT limit of 0.012 lb/MMBtu (ARM 17.8.752), unless RMP submits an application to the Department for a modification to the filterable PM/PM_{10} BACT limit and, after the applicable review process, it is demonstrated through data and information gathered during the PM/PM_{10} Optimization Period that a different filterable PM/PM_{10} BACT limit is necessary, in which case the filterable PM/PM_{10} BACT limit shall be adjusted accordingly (BER order signed May 6, 2005).

b. PM/PM_{10} emissions from the Boiler stack shall not exceed 0.024 lb/MMBtu (filterable and condensable) (ARM 17.8.752).

5. VOC emissions from the Boiler shall be controlled by good combustion practices. VOC emissions from the Boiler stack shall not exceed 0.0034 lb/MMBtu (ARM 17.8.752).

6. Hydrochloric acid (HCl) from the Boiler shall be controlled with the use of the dry

FGD/SDA (ARM 17.8.752). HCl emissions from the Boiler stack shall not exceed 1.54 lb/hr (0.00118 lb/MMBtu) based on a 1-hour average (ARM 17.8.749).

7. HF from the Boiler shall be controlled with the use of the dry FGD/SDA (ARM 17.8.752). HF emissions from the Boiler stack shall not exceed 0.67 lb/hr (0.00051 lb/MMBtu) based on a 1-hour average (ARM 17.8.749).

8. Sulfuric Acid (H_2SO_4) Mist emissions from the Boiler shall be controlled by the use of dry FGD/SDA. H_2SO_4 emissions shall not exceed 8.2 lb/hr (0.0063 lb/MMBtu) based on a 1-hour average (ARM 17.8.752).

9. Hg emissions

   a. For the 36 months following commencement of commercial operations ("Hg Demonstration Period"), the RMP Hardin facility will be available as a testing facility for Hg control. During the Hg Demonstration Period, RMP will operate equipment and control equipment at the Hardin facility in a manner that demonstrates the capabilities of Hg emission control. Prior to the completion of the Hg Demonstration Period, RMP shall install and operate an activated carbon injection control system or, at RMP's request and as approved by the Department, an equivalent technology (equivalent in removal efficiency) ("Installed Technology") (BER order signed May 6, 2005).

   b. Within the 18 months following the completion of the Hg Demonstration Period, RMP shall operate the Installed Technology to optimize the Installed Technology's performance for Hg emission reduction ("Hg Optimization Period"). Not later than 18 months after the completion of the Hg Demonstration Period, RMP shall submit to the Department an application for an Hg BACT emission limit for the Installed Technology, which will utilize the Installed Technology as the base technology. If the Department determines the application to be deficient or incomplete, RMP shall submit information responsive to any noted deficiencies within a reasonable time period (BER order signed May 6, 2005).

10. The emissions of radionuclides from the Boiler shall be controlled by an FFB. The Boiler's PM_{10} emission limit shall be used as a surrogate emission limit for radionuclides (ARM 17.8.752).

11. The emissions of trace metals from the Boiler shall be controlled by an FFB. The Boiler's PM_{10} emission limit shall be used as a surrogate emission limit for trace metals (ARM 17.8.752).

12. The Boiler stack shall stand no less than 250 feet above ground level (ARM 17.8.749).

13. The sulfur content of any coal fired at RMP shall not exceed 1% by weight calculated on a monthly average (ARM 17.8.749).

14. Coal fired in the Boiler shall have a minimum heating value of 8000 Btu/lb calculated on a monthly average (ARM 17.8.749).

C. Cooling Tower

RMP is required to operate and maintain a mist eliminator on the cooling tower that limits PM_{10} emissions to no more than 0.001% of circulating water flow (ARM 17.8.752).

D. Coal Transfer, Coal Milling, Fuel Transfer, Lime Transfer, and Bottom and Fly Ash Transfer

1. Emissions from the following baghouses/bin vents shall not exceed 0.01 grains/dscf of particulate emissions (ARM 17.8.752):

   a. Coal unloading baghouse: RCF-BH-001
   b. Coal silo baghouse: RCF-BH-002
   c. Coal storage bunkers baghouse: RCF-BH-003
   d. SDA lime silo bin vent: FGT-BV-001
   e. FGD ash silo bin vent: WMH-BV-002
   f. Recycle ash silo bin vent: FGT-BV-002
   g. Water treatment lime silo baghouse: RWS-BH-001
   h. Soda ash silo baghouse: RWS-BH-002

2. RMP shall install and maintain enclosures surrounding the following process operations (ARM 17.8.752):

   a. Coal Transfer:

      i. Truck to below-grade hopper
      ii. Below-grade hopper to stockout conveyor
      iii. Coal storage silo to reclaim conveyor
      iv. Reclaim conveyor to bunker feed conveyor
      v. Bunker feed conveyor to coal bunkers
      vi. Coal bunkers to coal pulverizers

   b. Coal Pulverizers

   c. Fuel Transfer: Coal pulverizers to boiler

3. Draft pressure from the boiler shall be present to provide particulate control for fuel transfer from coal pulverizers to the Boiler (ARM 17.8.752).

4. RMP shall store onsite coal in the coal storage silo (ARM 17.8.749).

E. Temporary Auxiliary Boiler

1. The operation of the temporary auxiliary boiler shall not exceed 1000 hours per rolling 12-month time period (ARM 17.8.749).

2. The sulfur content of the No. 2 fuel oil used in the temporary auxiliary boiler shall not exceed 0.05% sulfur (ARM 17.8.752).

3. RMP shall not operate the temporary auxiliary boiler while the PC-fired Boiler is combusting coal (ARM 17.8.749).

F. Testing Requirements

1. RMP shall use the data from the continuous opacity monitoring system (COMS) to monitor compliance with the opacity limit contained in Section II.A.1, for the Boiler (ARM 17.8.749).

2. RMP shall test the Boiler for CO within 180 days of initial start-up of the Boiler, or according to another testing/monitoring schedule as may be approved by the Department, to demonstrate compliance with the CO emission limit contained in Section II.B.1. The testing shall continue on an every two-year basis, or according to another testing/monitoring schedule/demonstration as may be approved by the Department (ARM 17.8.105 and 17.8.749).

3. RMP shall use the data from the NO_x CEMS to monitor compliance with the NO_x emission limits contained in Section II.B.2 for the Boiler (ARM 17.8.749).

4. RMP shall use the data from the SO_2 CEMS to monitor compliance with the SO_2 emission limits contained in Sections II.B.3 for the Boiler (ARM 17.8.749).

5. RMP shall test the Boiler for PM/PM_{10} within 180 days of initial start-up of the Boiler, or according to another testing/monitoring schedule as may be approved by the Department, to monitor compliance with the PM/PM_{10} emission limits contained in Section II.B.4. The testing shall continue on an every five-year basis, or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and 17.8.749).

6. RMP shall test the Boiler for HCl within 180 days of initial start-up of the Boiler, or according to another testing/monitoring schedule as may be approved by the Department, to monitor compliance with the HCl emission limit contained in Section II.B.6. The testing shall continue on an every five-year basis, or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and 17.8.749).

7. RMP shall test the Boiler for HF within 180 days of initial start-up of the Boiler, or according to another testing/monitoring schedule as may be approved by the Department, to monitor compliance with the HF emission limit contained in Section II.B.7. The testing shall continue on an every five-year basis, or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and 17.8.749).

8. RMP shall test the Boiler for H_2SO_4 within 180 days of initial start-up of the Boiler, or according to another testing/monitoring schedule as may be approved by the Department, to monitor compliance with the H_2SO_4 limit contained in Section II.B.8. The testing shall continue on an every five-year basis, or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).

9. RMP shall test the Boiler for Hg within 180 days of initial start-up of the Boiler, or according to another testing/monitoring schedule as may be approved by the Department, to monitor compliance with the Hg limit contained in Section II.B.9. The testing shall continue on an annual basis, or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).

10. RMP shall obtain written coal analyses that are representative for all coal received from

each coal supplier. A daily sample (or samples, if necessary, with amounts used of each type, as appropriate) representing all coal received for that day shall be analyzed for, at a minimum, sulfur content, ash content, and Btu value (Btu/lb). A monthly composite sample representing all coal received during the month will be analyzed for, at a minimum, mercury, chlorine, and fluorine content (ARM 17.8.749).

11. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

12. The Department may require additional testing (ARM 17.8.105).

G. Operational Reporting Requirements

1. RMP shall supply the Department with annual production information for all emission points, as required, by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in Section I of the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used for calculating operating fees based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. RMP shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745 that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit.

   The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. RMP shall document, by month, the total heat input for the Boiler. Within 30 days following the end of each month, RMP shall calculate the total heat input for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.A.4. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

4. RMP shall document, by month, the hours of operation of the temporary auxiliary boiler. Within 30 days following the end of the month, RMP shall calculate the total hours of operation for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation in Section II.E.2. The information for each of the previous months shall be submitted along with the annual emission inventory (ARM 17.8.749).

5. The records compiled in accordance with this permit shall be maintained by RMP as a permanent business record for at least five years following the date of the measurement, shall be submitted to the Department upon request, and shall be available at the plant site for inspection by the Department (ARM 17.8.749).

H. Continuous Emission Monitoring Systems (CEMS)

1. RMP shall install, operate, calibrate, and maintain CEMS for the following:

   a. A CEMS for the measurement of SO_2 shall be operated on the PC-fired Boiler stack (ARM 17.8.749 and 40 CFR 72-78).

   b. A flow monitoring system to complement the SO_2 monitoring system shall be operated on the PC-fired Boiler stack (40 CFR 72-78).

   c. A CEMS for the measurement of NO_x shall be operated on the PC-fired Boiler stack (ARM 17.8.749 and 40 CFR 72-78).

   d. A Continuous Opacity Monitoring System (COMS) for the measurement of opacity shall be operated on the PC-fired Boiler stack (ARM 17.8.749 and 40 CFR 72-78).

   e. A CEMS for the measurement of oxygen (O_2) or carbon dioxide (CO_2) content shall be operated on the PC-fired Boiler stack (ARM 17.8.749).

2. RMP shall determine CO_2 emissions from the PC-fired Boiler Stack by one of the methods listed in 40 CFR 75.10 (40 CFR 72-78).

3. All continuous monitors required by this permit and by 40 CFR Part 60 shall be operated, excess emissions reported, and performance tests conducted in accordance with the requirements of 40 CFR Part 60, Subpart A; 40 CFR Part 60, Subpart Da; 40 CFR Part 60, Appendix B (Performance Specifications #1, #2, and #3); and 40 CFR Part 72-78, as applicable (ARM 17.8.749 and 40 CFR 72-78).

4. On-going quality assurance requirements for the gas CEMS must conform to 40 CFR Part 60, Appendix F (ARM 17.8.749).

5. RMP shall inspect and audit the COMS annually, using neutral density filters. RMP shall conduct these audits using the applicable procedures and forms in the EPA Technical Assistance Document: Performance Audit Procedures for Opacity Monitors (EPA-450/4-92-010, April 1992). The results of these inspections and audits shall be included in the quarterly excess emission report (ARM 17.8.749).

6. RMP shall maintain a file of all measurements from the CEMS, and performance testing measurements; all CEMS performance evaluations; all CEMS or monitoring device calibration checks and audits; and adjustments and maintenance performed on these systems or devices, recorded in a permanent form suitable for inspection. The file shall be retained on site for at least five years following the date of such measurements and reports. RMP shall supply these records to the Department upon request (ARM 17.8.749).

7. RMP shall maintain a file of all measurements from the COMS, and performance testing measurements; all COMS performance evaluations; all COMS or monitoring device calibration checks and audits; and adjustments and maintenance performed on these systems or devices, recorded in a permanent form suitable for inspection. The file shall be retained on site for at least five years following the date of such measurements and reports. RMP shall supply these records to the Department upon request (ARM 17.8.749).

I. Notification

RMP shall provide the Department with written notification of the following dates within the specified time periods (ARM 17.8.749):

1. Commencement of construction of the SDA and FFB within 30 days after commencement of construction;

2. Anticipated start-up date of the PC-fired Boiler postmarked not more than 60 days nor less than 30 days prior to start up; and

3. Actual start-up date of the PC-fired Boiler within 15 days after the actual start-up of the Boiler.

Section III: General Conditions

A. Inspection - RMP shall allow the Department's representatives access to the facility at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS, COMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if RMP fails to appeal as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving any permittee of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

D. Enforcement - Violation of requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401, *et seq.*, MCA, and ARM 17.8.763.

E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefor, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the facility.

G. Construction Commencement - Construction must begin within three years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

H. Permit Fees - Pursuant to Section 75-2-220, MCA, the continuing validity of this permit is conditional upon the payment by the permittee of an annual operation fee, as required, by that Section and rules adopted thereunder by the Board.

Attachment 2

INSTRUCTIONS FOR COMPLETING EXCESS EMISSION REPORTS (EER)

PART 1 Complete as shown. Report total time during the reporting period in hours. The determination of plant operating time (in hours) includes time during unit start up, shut down, malfunctions, or whenever pollutants of any magnitude are generated, regardless of unit condition or operating load.

Excess emissions include all time periods when emissions, as measured by the CEMS, exceed any applicable emission standard for any applicable time period.

Percent of time in compliance is to be determined as:

(1 – (total hours of excess emissions during reporting period / total hours of CEMS availability during reporting period)) x 100

PART 2 Complete as shown. Report total time the point source operated during the reporting period in hours. The determination of point source operating time includes time during unit start up, shut down, malfunctions, or whenever pollutants (of any magnitude) are generated, regardless of unit condition or operating load.

Percent of time CEMS was available during point source operation is to be determined as:

(1–(CEMS downtime in hours during the reporting period[a] /total hours of point source operation during reporting period)) x 100

a - All time required for calibration and to perform preventative maintenance must be included in the CEMS downtime.

PART 3 Complete a separate sheet for each pollutant control device. Be specific when identifying control equipment operating parameters. For example: number of TR units, energizers for electrostatic precipitators (ESP); pressure drop and effluent temperature for baghouses; and bypass flows and pH levels for scrubbers. For the initial EER, include a diagram or schematic for each piece of control equipment.

PART 4 Use Table I as a guideline to report all excess emissions. Complete a separate sheet for each monitor. Sequential numbering of each excess emission is recommended. For each excess emission, indicate: 1) time and duration, 2) nature and cause, and 3) action taken to correct the condition of excess emissions. Do not use computer reason codes for corrective actions or nature and cause; rather, be specific in the explanation. If no excess emissions occur during the quarter, it must be so stated.

PART 5 Use Table II as a guideline to report all CEM system upsets or malfunctions. Complete a separate sheet for each monitor. List the time, duration, nature and extent of problems, as well as the action taken to return the CEM system to proper operation. Do not use reason codes for nature, extent or corrective actions. Include normal calibrations and maintenance as prescribed by the monitor manufacturer. Do not include zero and span checks.

PART 6 Complete a separate sheet for each pollutant control device. Use Table III as a guideline to report operating status of control equipment during the excess emission. Follow the number sequence as recommended for excess emissions reporting. Report operating parameters consistent with Part 3, Subpart e.

PART 7 Complete a separate sheet for each monitor. Use Table IV as a guideline to summarize excess emissions and monitor availability.

PART 8 Have the person in charge of the overall system and reporting certify the validity of the report by signing in Part 8.

EXCESS EMISSIONS REPORT

PART 1 – General Information

a. Emission Reporting Period ____________________

b. Report Date ____________________

c. Person Completing Report ____________________

d. Plant Name ____________________

e. Plant Location ____________________

f. Person Responsible for Review
and Integrity of Report ____________________

g. Mailing Address for 1.f. ____________________

____

h. Phone Number of 1.f. ____________________

i. Total Time in Reporting Period ____________________

j. Total Time Plant Operated During Quarter ____________________

k. Permitted Allowable Emission Rates: Opacity ____________________

SO_2 __________ NO_x __________ TRS __________

l. Percent of Time Out of Compliance: Opacity ____________________

SO_2 __________ NO_x __________ TRS __________

m. Amount of Product Produced
During Reporting Period ____________________

n. Amount of Fuel Used During Reporting Period ____________________

PART 2 - Monitor Information: Complete for each monitor.

a. Monitor Type (circle one)

Opacity SO_2 NO_x O_2 CO_2 TRS Flow

b. Manufacturer ____________________

c. Model No. ____________________

d. Serial No. ____________________

e. Automatic Calibration Value: Zero__________ Span __________

f. Date of Last Monitor Performance Test ____________________

g. Percent of Time Monitor Available:

1) During reporting period ____________________

2) During plant operation ____________________

h. Monitor Repairs or Replaced Components Which Affected or Altered Calibration Values ____________________

i. Conversion Factor (f-Factor, etc.) ____________________

j. Location of monitor (e.g. control equipment outlet)____________________

PART 3 - Parameter Monitor of Process and Control Equipment. (Complete one sheet for each pollutant.)

a. Pollutant (circle one):

Opacity SO_2 NO_x TRS

b. Type of Control Equipment ____________________

c. Control Equipment Operating Parameters (i.e., delta P, scrubber water flow rate, primary and secondary amps, spark rate)

____

d. Date of Control Equipment Performance Test ____________________

e. Control Equipment Operating Parameter During Performance Test

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PART 4 - Excess Emission (by Pollutant)

Use Table I: Complete table as per instructions. Complete one sheet for each monitor.

PART 5 - Continuous Monitoring System Operation Failures

Use Table II: Complete table as per instructions. Complete one sheet for each monitor.

PART 6 - Control Equipment Operation During Excess Emissions

Use Table III: Complete as per instructions. Complete one sheet for each pollutant control device.

PART 7 - Excess Emissions and CEMS performance Summary Report

Use Table IV: Complete one sheet for each monitor.

PART 8 - Certification for Report Integrity, by person in 1.f.

THIS IS TO CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE INFORMATION PROVIDED IN THE ABOVE REPORT IS COMPLETE AND ACCURATE.

SIGNATURE ____

NAME ____

TITLE ____

DATE ____

TABLE I

EXCESS EMISSIONS

Date	Time From	Time To	Duration	Magnitude	Explanation/Corrective Action

TABLE II

CONTINUOUS MONITORING SYSTEM OPERATION FAILURES

Date	Time From	Time To	Duration	Problem/Corrective Action

TABLE III

CONTROL EQUIPMENT OPERATION DURING EXCESS EMISSIONS

Date	Time From	Time To	Duration	Operating Parameters	Corrective Action

TABLE IV

Excess Emission and CEMS Performance Summary Report

Pollutant (circle one): SO_2 NO_x TRS H_2S CO Opacity

Monitor ID

Emission data summary [1]	**CEMS performance summary** [1]
1. Duration of excess emissions in reporting period due to: a. Startup/shutdown b. Control equipment problems c. Process problems d. Other known causes e. Unknown causes 2. Total duration of excess emissions 3. [Total duration of excess emissions / Total time CEM operated X 100 =]	1. CEMS[2] downtime in reporting due to: a. Monitor equipment malfunctions b. Non-monitor equipment malfunctions c. Quality assurance calibration d. Other known causes e. Unknown causes 2. Total CEMS downtime 3. [Total CEMS downtime / Total time source emitted X 100 =]

1 For opacity, record all times in minutes. For gases, record all times in hours. Fractions are acceptable (e.g., 4.06 hours)
2 CEMS downtime shall be regarded as any time CEMS is not measuring emissions.

Permit Analysis
Rocky Mountain Power, Inc.
Permit #3185-03

I. Introduction/Process Description

A. Permitted Equipment

Rocky Mountain Power, Inc. (RMP) was permitted under Permit #3185 to construct a nominal 116-gross megawatt (MW) electrical power generation facility approximately 1.2 miles northeast of Hardin, Montana. The facility consists of a pulverized coal-fired (PC-fired) boiler and a steam turbine, which will drive a 135 MVA class nameplate electric generator to produce a nominal 116-gross MW of electric power (11-MW of the power produced will be used on average by RMP for plant auxiliary power). The legal description of the site location is the Northwest ¼ of Section 12, Township 1 South, Range 33 East, in Big Horn County, Montana. The following equipment is permitted for this facility:

1. 1,304 million British thermal units per hour (MMBtu/hr) PC-fired Boiler (with associated steam turbine and electric generator) with a 250-foot stack
2. Cooling tower
3. Coal, lime, and ash handling systems
   a. Coal unloading baghouse (RCF-BH-001) – 50,000 dry standard cubic feet per minute (dscfm)
   b. Coal silo baghouse (RCF-BH-002) – 7,500 dscfm
   c. Coal storage bunkers baghouse (RCF-BH-003) – 5,000 dscfm
   d. Spray dry absorber (SDA) lime silo bin vent (FGT-BV-001) – 1,000 dscfm
   e. Flue gas desulfurization (FGD) ash silo bin vent (WMH-BV-002) – 2,000 dscfm
   f. Recycle ash silo bin vent (FGT-BV-002) – 2,000 dscfm
   g. Water treatment lime silo baghouse (RWS-BH-001) – 1,000 dscfm
   h. Soda ash silo baghouse (RWS-BH-002) – 1,000 dscfm
4. Temporary auxiliary boiler

B. Source Description

1. Boiler and Associated Emission Control

The permitted Boiler is a 1968 wet-bottom, wall-fired boiler manufactured by Mitchell of the United Kingdom. The Boiler is configured with 3 pulverizers and 12 burners with opposed firing. The maximum nominal heat input rate to the Boiler will be 1,304 MMBtu/hr, which will be used to produce up to approximately 900,000 pounds of steam per hour. Natural gas will be used to fire the Boiler during periods of start-up. During normal operations, the Boiler will be fueled with pulverized coal. At this time, RMP anticipates the Boiler will combust coal owned by the Tribe of Crow Indians from the Absaloka Mine. The mine, which is owned by Westmoreland Resources, Inc., is located approximately 30 miles east of Hardin. Using the heat content of 8,700 Btu per pound (lb) of Absaloka Mine coal, as provided by Westmoreland Resources, Inc., the coal-firing rate will be approximately 75 tons per hour (ton/hr) and 656,500 tons per year (tpy).

Boiler combustion gases (flue gases) would be routed to a Selective Catalytic Reduction (SCR) unit for control of nitrogen oxides (NO_X). From the SCR unit, the flue gas would then be routed to a dry flue gas desulfurization (FGD) system (specifically characterized as a Spray Dry Absorber (SDA)) that uses a lime reagent for control of sulfur dioxide

(SO_2). Other acid gases including sulfuric acid (H_2SO_4), hydrochloric acid (HCl) and hydrofluoric acid (HF), and ionic mercury (Hg) will also be removed as a co-benefit control. A fabric filter baghouse (FFB) would be located downstream of the SDA for particulate matter (PM) control. Additional pollutants such as Hg, trace metals, and radionuclides will also be removed as a co-benefit control if present in the particulate form. From the FFB, the flue gas would exit to the atmosphere.

2. Cooling Tower

   A wet cooling tower will be used to dissipate the heat from the steam turbine by using the latent heat of water vaporization to exchange heat between the process and the air passing through the cooling tower. The proposed cooling tower will be an induced, counter flow draft design equipped with cellular (honeycomb) drift eliminators. The maximum make-up water rate for the proposed cooling tower will be approximately 1,400 gallons per minute (gpm). Water will come from the Bighorn River. There will be no direct discharge to the waters of the state from the operation of this cooling tower. Blow-down will be treated to maximize water recovery. Treatment will include a reverse osmosis unit followed by a condensate polisher (de-ionizer) and a small dehydrator. Discharge from the blow-down will be reduced to less than 30 gpm, and will be discharged to the makeup system for the lime slurry, to be injected into the SDA. If the discharged water cannot be immediately used, it will be stored in a surge tank until it can be reused within the system.

3. Coal Storage and Handling

   According to Westmoreland Resources, Inc., the coal will have an "as-received" moisture content of 24.5%. This high moisture content will serve to inhibit fugitive dust emissions during storage and handling activities. Coal will be transported the 30 miles from the Absaloka Mine using over-the-road tractor-trailer transport vehicles. Coal will be delivered around the clock at the rate of approximately 1-½ trucks per hour (3 trucks every 2 hours). Some of the empty coal trucks may be used to haul ash and/or scrubber sludge to the planned dedicated disposal site.

   Coal delivery trucks will deliver coal to an enclosed truck unloading station. The enclosure will be a self-supported, metal-clad building with gravity louvers on the sidewalls and automated doors at the entry and exit ends for maximum containment of airborne PM. The building will be of sufficient size to fully contain a delivery truck, trailer, and pup. Gravity-operated louvers on the enclosure walls will normally provide openings for the design volume of airflow removed by a dust collection system provided for the building. When one of the enclosure doors is opened, the dampers will close, and air will be drawn through the door openings only. The overhead doors will be interlocked such that only one door can be open at a time.

   The trucks will unload coal into below-grade receiving hoppers sized to accept the complete discharge from a trailer and pup. A grizzly with 6-inch square openings will be provided on the hopper to prevent oversize materials from entering and plugging the conveying equipment. A rubber seal boot will partially enclose the grizzly and hopper top to minimize fugitive dust emissions during the unloading process. Two variable speed stockout feeders will transfer coal from the unloading hoppers onto an inclined, covered belt conveyor.

   Fugitive dust collection for coal truck unloading operations will be provided by a dust collector (RCF-BH-001) with a required efficiency of 0.01 grains per dry standard cubic foot (gr/dscf) and a fan that provides a nominal air flow rate of 50,000 actual cubic feet per minute (acfm). Coal dust collected by the baghouse will be pneumatically conveyed to a coal storage silo. Ductwork will connect the dust collector to the building enclosure, hopper rubber seal boot, and feeder transfer point hoods. Inflow air through the enclosure louvers or doors will maintain a clean work environment within the enclosure. Inflow air through the hopper will facilitate fugitive emissions collection during coal unloading. Additional ventilation will be provided at the conveyor transfer points. Ventilation design will provide for positive ventilation (negative draft) of the building under worst-case conditions with one door fully open.

The stockout conveyor will convey coal from the receiving hoppers to the top of an active coal storage silo. The silo will discharge at the bottom via a reclaim feeder to a covered belt conveyor. This reclaim conveyor will transfer coal from the silo to coal bunkers located within the generation building. A fabric filter bin vent (RCF-BV-002) located on top of the silo will control dust emissions from silo loading with a maximum design outlet grain loading of 0.01 gr/dscf and 7,500 acfm air flow. It will also control fugitive dust emissions from material transfers between the reclaim feeder and reclaim conveyor. Dust pulsed from the bin vent fabric filters will fall directly into the silo.

4. Lime Handling Operations

As previously mentioned, the proposed facility will use a lime SDA to control SO_2 and certain Hazardous Air Pollutant (HAP) emissions. Lime will be delivered by truck at a rate of approximately 1 truck per day. Lime will be used at a rate of 2,200 lb/hr.

Pebble lime for the SDA will be pneumatically unloaded from delivery trucks into a storage silo. The storage silo will be equipped with a fabric filter bin vent (FGT-BV-001) to collect fugitive dust generated during loading. The bin vent is limited to a maximum outlet grain loading of 0.01 gr/dscf (with a nominal airflow rate of 1,000 acfm). The bottom of the lime storage silo will be enclosed and will house the lime screw feeder, slaker equipment, screw equipment, screw conveyor, and agitated slurry storage tank.

5. Ash and Spent Lime Handling Operations

Combustion of coal in the Boiler will produce ash. Bottom ash from the Boiler and ash collected from the economizer will be mixed with water and fed via a system of conveyors to a load-out bunker located outside of the generation building. Front-end loaders will transfer the wetted material to trucks for transport off-site. Particulate emissions from these operations to the atmosphere will be negligible since the materials would be wet. A pneumatic conveying system will collect fly ash and spent lime from the SDA and Boiler baghouse. It will transfer the material to one of two storage silos. SDA material will feed to an FGD ash silo. Material from the baghouse will first be directed to a recycle ash silo. Once this silo is filled, the material will be routed to the FGD ash silo.

Particulate emissions resulting from loading the recycle ash silo will be controlled by a fabric filter bin vent located on top of the silo. The bin vent (WMH-BV-002) is limited to a maximum outlet grain loading of 0.01 gr/dscf (with a nominal airflow rate of 2,000 acfm). Material collected in the recycle ash silo will be mixed with cooling tower blowdown water and used to feed the SDA.

Material not required for recycle will be conveyed to the FGD ash silo. Particulate emissions resulting from silo loading will be controlled by a fabric filter bin vent located on top of the silo. The bin vent (WMH-BV-003) is limited to a maximum outlet grain loading of 0.01 gr/dscf, (with a nominal airflow rate of 2,000 acfm). Material will be discharged from the silo to a screw feeder for either wet or dry loadout into trucks or railcars. An elevated structure will support the silo and loading equipment, allowing trucks and railcars to access beneath. The loadout equipment will be enclosed within a silo skirt. The dry loading spout will be ventilated to the silo's bin vent.

6. Water Treatment Reagents Handling

   Lime and soda ash will be stored in separate silos for use in the water treatment system. Each silo will be equipped with a bin vent to collect fugitive dust generated during lime loading. The bin vents (RWS-BV-001 – lime and RWS-BV-002 – soda ash) are limited to a maximum outlet grain loading of 0.01 gr/dscf, (with a nominal airflow rate of 1,000 acfm).

7. Temporary Auxiliary Boiler

   The temporary auxiliary boiler will be used to provide supplemental heat when the PC-fired Boiler is operating on natural gas for activities such as steam blows or freeze protection during tuning or startup of the Boiler. The facility does not have a permanent auxiliary boiler to supply supplement steam during periods of downtime, so a temporary portable auxiliary boiler will be used. The auxiliary boiler will be a trailer-mounted boiler with a capacity of 10,000 pounds per hour of steam (approximately 11.8 MMBtu/hr). The boiler is rated for a maximum of 85 gallons per hour of No. 2 fuel oil at full load. It is planned that the auxiliary boiler will be used for initial warming of the system at the maximum rate of 10,000 pounds per hour. During start up of the forced draft and induced draft fans the auxiliary boiler can be used at low loads to prevent freezing in the tubes. Once startup has progressed to the point that the Boiler is fired on coal, there will be no need for the auxiliary boiler. The auxiliary boiler would not be operated at the same time the unit is combusting coal, thus there will be no increase in yearly potential emissions.

C. Permit History

On June 11, 2002, **Permit #3185-00** was issued to RMP to construct a 113-MW electrical power generation facility approximately 1.2 miles northeast of Hardin, Montana. The facility would consist of a PC-fired Boiler and a steam turbine, which would drive an electric generator to produce a nominal 113-MW of electric power (8.5-MW of the power produced would be used by RMP).

On November 29, 2003, **Permit #3185-01** was issued to allow RMP to move the plant location by 610 meters, 10 degrees clockwise from North; reduce the SO_2 emission rate limit; reduce the Boiler stack height; correct Boiler exhaust temperature; add HCl and HF emission limits; and include short term emission limits for SO_2. The legal description of the facility's location would remain the same except it will be in the Northwest ¼ of Section 12 rather than the Southwest ¼ of Section 12. The location of all buildings, property boundaries, and emission sources would remain unchanged relative to each other. The Boiler stack height was changed from the previously permitted level of no less than 350 feet to at least 250 feet above ground level. The Boiler exhaust temperature was assumed to be 325º F in Permit Application #3185-00, but would actually be approximately 160º F. The permit was amended to include enforceable limits on HCl and HF emissions to ensure that the Hardin facility remained an area source (as opposed to a major source) with respect to Hazardous Air

Pollutants (HAPs). In addition, short-term limits on SO_2 were included in the permit to protect short-term ambient air quality standards and increments. No emission increases would result from the amendment, however, RMP provided modeling to support the facility move, stack height change, and Boiler exhaust temperature correction. Permit #3185-01 replaced Permit #3185-00.

On April 30, 2004, the Department of Environmental Quality (Department) received a permit application from RMP, requesting a change in the currently permitted control equipment on the PC-fired Boiler for SO_2 and particulate matter with an aerodynamic diameter less than 10 micrometers (PM_{10}) emissions and changes in the facility's material handling systems, cooling system, and plant layout. The permitted system for SO_2 and PM_{10} emissions under Permit #3185-01 included a wet venturi scrubber operated in conjunction with a multiclone. RMP proposed to replace that with a lime SDA followed by an FFB. The changes in the cooling system and the consequential increase in potential PM_{10} emissions triggered review under Prevention of Significant Deterioration (PSD) of Air Quality. The increased emissions would be a result of the potential increase of the level of total dissolved solids (TDS) in the cooling system feed water, a more accurate water balance (which minimizes the amount of water discharged to evaporation ponds), and the previously overestimated cooling tower mist eliminator control efficiency, which could not be guaranteed in the current configuration. In addition, RMP requested to correct the current HF limit that was established under Permit #3185-01. Previously established limits associated with oxides of nitrogen (NO_x), carbon monoxide (CO), and Volatile Organic Compound (VOC) emissions from the Boiler were not reviewed in this action because the proposed modifications would not affect them. The application was deemed complete on October 4, 2004.

In response to comments, several emission limits changed: SO_2 from 0.12 lb/MMBtu on a rolling 30-day average to 0.11 lb/MMBtu on a rolling 30-day average, filterable PM/PM_{10} from 0.015 lb/MMBtu to 0.012 lb/MMBtu, and Hg from 3.54 lb per trillion Btu (lb/TBtu) to 5.8 lb/TBtu with a testing plan to evaluate the feasibility of lowering that limit. In addition, a total PM/PM_{10} limit (that includes filterable and condensable fractions) was added. Additional discussion regarding these changes was included in Section III – BACT Determination for **Permit #3185-02**.

The Department Decision (DD) of Permit #3185-02 was appealed to the Montana Board of Environmental Review (BER) by RMP, the Montana Environmental Information Center, William J. Eggers III, Margaret J. S. Eggers, and Tracy Small. A settlement agreement was signed by all parties (including the Department) and approved in a BER order signed on May 6, 2005. The order included the following changes (in summary):

- Clarification that if water is used for dust suppression on unpaved portions of access roads, parking lots, and general plant area only clear, non-oily water that contains no regulated hazardous waste shall be used.
- 18-month optimization periods for SO_2 and PM_{10} during which temporary emission limits would apply. Following the 18-month optimization periods, the SO_2 (including control efficiencies) and PM_{10} limits would revert back to the Best Available Control Technology (BACT) limits established in the DD of Permit #3185-02. Through a permit application, RMP may demonstrate to the Department that other limits are appropriate using information from the optimization periods.
- A 36-month demonstration period for mercury (Hg) emissions during which RMP would make the Hardin facility available as a test facility for Hg controls. By the end of that 36-month demonstration period, RMP would install and operate an activated carbon injection system or equivalent technology for Hg control. An 18-month optimization period for the Hg control system would follow. Prior to the end of the 18-month

optimization period, RMP would submit an application to the Department with information from that Hg optimization period to determine an appropriate Hg BACT emissions limit.

In addition, in an unrelated action, the Department changed the rule reference on the requirement in the permit to comply with 40 Code of Federal Regulations (CFR) 60, Subpart Da from the Administrative Rules of Montana (ARM) 17.8.749 to ARM 17.8.340 and 40 CFR 60, Subpart Da. The change reflected information provided by RMP (that was not available prior to the issuance of the DD) that reconstruction as defined under 40 CFR 60.15 had occurred for the PC-fired Boiler. This change was not a substantive change, and was being made at that time for convenience purposes. Permit #3185-02 was issued final on May 16, 2005. Permit #3185-02 replaced Permit #3185-01.

D. Current Permit Action

On December 20, 2005, the Department of Environmental Quality (Department) received a complete permit application from RMP to add a temporary auxiliary 11.8 million British thermal units per hour (MMBtu/hr) boiler necessary for startup of the PC-fired Boiler (Boiler). The temporary auxiliary boiler will be used to provide supplemental heat when the PC-fired Boiler is operating on natural gas for activities such as steam blows or freeze protection during tuning or startup of the Boiler. Once startup has progressed to the point that the Boiler is fired on coal, there will be no need for the auxiliary boiler. The auxiliary boiler would not be operated at the same time the Boiler is combusting coal, therefore overall potential emissions at the facility would not increase. **Permit #3185-03** replaces Permit #3185-02.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available, upon request, from the Department. Upon request, the Department will provide references for the location of complete copies of all applicable rules and regulations, or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emissions of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary, using methods approved by the Department.

   Initial performance tests are required for the PC-fired Boiler as directed by the New Source Performance Standards (NSPS), Subpart Da. Continuous emission monitoring systems (CEMS) will be used to monitor ongoing NO_x compliance and SO_2 compliance. Continuous opacity monitoring systems (COMS) will be used to monitor ongoing compliance with the opacity limitations. Based on the emissions from the PC-fired Boiler, the Department determined that initial testing for CO, PM_{10}, HCl, HF, and Hg is necessary. Furthermore, based on the emissions from the PC-fired Boiler, the Department determined that additional testing annually is necessary to monitor compliance with the Hg limit, additional testing every two years is necessary to monitor compliance with the CO limit, and additional testing every five years is necessary to monitor compliance with the PM_{10}, HCl, HF, and H_2SO_4 emission limits.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

   RMP shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly, by telephone, whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to:

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.213 Ambient Air Quality Standard for Ozone
5. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
6. ARM 17.8.221 Ambient Air Quality Standard for Visibility
7. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

RMP must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emission sources and that reasonable precaution is taken to control emissions of airborne particulate. (2) Under this section, RMP shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no

person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). The owner or operator or any stationary source or modification, as defined and applied in 40 CFR Part 60, shall comply with the applicable standards and provisions of 40 CFR Part 60.

   40 CFR 60, Subpart A – General Provisions. This subpart applies to all affected equipment or facilities subject to an NSPS subpart listed below.

   40 CFR 60, Subpart Da - Standards of Performance for Electric Utility Steam Generating Units. This subpart would apply to the RMP PC-fired Boiler because it is an electric utility steam generating unit with a heat input capacity greater than 250 MMBtu/hr. The PC-fired Boiler was built in 1968, prior to the applicability date of September 18, 1978. However, based on information provided by RMP (submitted on April 5, 2005) regarding the upgrades made to the Boiler, the Department has determined that reconstruction (as defined under 40 CFR 60.15) has occurred; therefore, Subpart Da is applicable.

   40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Although the RMP temporary auxiliary boiler is a steam generating unit with a maximum design heat input capacity that falls into the range of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr; it was constructed in 1984 prior to the applicability date of June 9, 1989. Therefore, Subpart Dc does not apply to the temporary auxiliary boiler.

   40 CFR Part 60, Subpart Y – Standards of Performance for Coal Preparation Plants. This subpart applies to the RMP facility because RMP would be constructed after October 24, 1974, and the facility will pulverize or "crush" more than 200 tons/day of coal.

5. ARM 17.8.341 Emission Standards for Hazardous Air Pollutants. This rule incorporates, by reference, 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP). Since the emission of HAPs from the RMP coal-fired steam-electric generating facility is less than 10 tons per year for any individual HAP and less than 25 tons per year for all HAPs combined, the RMP facility is not subject to the provisions of 40 CFR Part 61. In addition, 40 CFR Part 61 does not apply because it does not contain any requirements applicable to RMP.

6. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, NESHAP for Source Categories. Since the emission of HAPs from the RMP coal-fired steam-electric generating facility is less than 10 tons per year for any individual HAP and less than 25 tons per year for all HAPs combined, the RMP facility is not a major source of HAPs.

D. ARM 17.8, Subchapter 4 – Stack Height and Dispersion Techniques, including, but not limited to:

   1. ARM 17.8.401 Definitions. This rule includes a list of definitions used in this chapter, unless indicated otherwise in a specific subchapter.

   2. ARM 17.8.402 Requirements. RMP must demonstrate compliance with the ambient air

quality standards with a stack height that does not exceed Good Engineering Practices (GEP). RMP made the appropriate demonstration of compliance with the ambient air quality standards.

E. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. RMP submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department; and the air quality operation fee is based on the actual, or estimated actual, amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

F. ARM 17.8, Subchapter 7 – Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. RMP has the PTE greater than 25 tons per year of PM, PM_{10}, NO_X, SO_2, and CO; therefore, a permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. RMP submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. RMP submitted an affidavit of publication of public notice for the December 20, 2005, issue of the *Billings Gazette*, a newspaper of general circulation in the city of Billings in Yellowstone County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving RMP of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

G. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is a listed source because it is a fossil-fuel fired steam-electric plant having more than 250 MMBtu/hr heat input. Furthermore, the facility's emissions are greater than 100 tons per year; therefore, the facility is a major source under the New Source Review (NSR)-Prevention of Significant Deterioration (PSD) program. This permit action does not constitute a major modification because the temporary auxiliary boiler emissions fall far below any PSD significance threshold for those pollutants; therefore, PSD review does not apply.

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:

    a. PTE > 100 tons/year of any pollutant.

    b. PTE > 10 tons/year of any one HAP, or PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule.

    c. Sources with the PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3185-03 for RMP, the following conclusions were made:

    a. The facility's PTE is greater than 100 tons/year for several criteria pollutants.

    b. The facility's PTE is less than 10 tons/year of any one HAP and less than 25 tons/year of all HAPs.

    c. This facility is not located in a serious PM_{10} nonattainment area.

    d. This facility is subject to current NSPS standards (40 CFR 60, Subparts Da and Y).

    e. This facility is not subject to any current NESHAP standards.

    f. This facility is a Title IV affected source.

    g. This facility is not an EPA designated Title V source.

Based on the above information, the RMP facility is a major source for Title V and, thus, a Title V Operating Permit is required.

III. BACT Determination

A BACT determination is required for each new or altered source. RMP shall install on the new source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized.

RMP submitted an emissions control analysis for the temporary auxiliary boiler. As post-combustion emissions control equipment is not available for this size of boiler (11.8 MMBtu/hr), RMP proposed the use of low sulfur No.2 fuel oil as BACT for this unit. RMP specified that the low sulfur No.2 fuel oil will have sulfur content less than or equal to 0.05%. In addition, RMP proposed limiting the hours of operation of the temporary auxiliary boiler to 1000 hours so all pollutant emissions will be less than one ton per year during operation of the unit.

The Department agrees with RMP's assessment. BACT for the temporary auxiliary boiler will be the use of low sulfur (less than 0.05% sulfur content) No. 2 fuel oil and a limit on the hours of operation of the unit, as proposed by RMP. The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

					Ton/Year				
Source	PM/PM_{10}	NO_x	CO	VOC	SO_x	HCl	HF	H_2SO_4	Hg
PC-fired Boiler	68.54	514.04	856.73	19.42	628.27	6.75	2.93	35.98	0.027
Cooling Tower	45.04								
Baghouse and Bin Vents	26.11								
Truck Traffic Fugitives	0.26	0.09	0.18	0.04	0.13				
Temporary Auxiliary Boiler*	0.09	0.85	0.21	0.01	0.30				
Totals	139.95	514.13	856.91	19.46	628.40	6.75	2.93	35.98	0.027

*The emissions from the temporary auxiliary boiler are not included in the total plant emissions because the temporary auxiliary boiler is prohibited from operating when the PC-fired Boiler is combusting coal. Therefore, those emissions would not occur at the same time and are not additive.

<u>PC-fired Boiler Emissions</u>

Size = 113 MW
Hours of Operation = 8,760 hr/yr
Heat Input = 1304 MMBtu/hr
Fuel Heating Value = 8,700 Btu/lb of coal

PM/PM_{10} Emissions
Emission Factor: 0.012 lb PM/MMBtu {Manufacturer's Guarantee, Permit Limit}
Calculations: 0.012 lb/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 68.54 ton/yr

NO_x Emissions
Emission Factor: 0.09 lb NOx/MMBtu {Manufacturer's Guarantee, Permit Limit}
Calculations: 0.09 lb/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 514.04 ton/yr

CO Emissions
Emission Factor: 0.15 lb CO/MMBtu {Manufacturer's Guarantee, Permit Limit}
Calculations: 0.15 lb/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 856.73 ton/yr

VOC Emissions
Emission Factor: 0.0034 lb VOC/MMBtu {Permit Limit}

Calculations: 0.0034 lb VOC/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 19.42 ton/yr

SO_x Emissions
Emission Factor: 0.11 lb/MMBtu {Permit Limit}
Calculations: 0.11 lb/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 628.27 ton/yr

HCl Emissions
Emission Factor: 0.00118 lb/MMBtu {Permit Limit}
Calculations: 0.00118 lb/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 6.75 ton/yr

HF Emissions
Emission Factor: 0.00051 lb/MMBtu {Permit Limit}
Calculations: 0.00051 lb/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 2.93 ton/yr

H_2SO_4 Emissions
Emission Factor: 0.0063 lb/MMBtu {Permit Limit}
Calculations: 0.0063 lb/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 35.98 ton/yr

Hg Emissions
Emission Factor: 0.00000475 lb/MMBtu {Worst case, assume no control}
Calculations: 0.00000475 lb/MMBtu * 1304 MMBtu/hr * 8760 hr/yr * 0.0005 ton/lb = 0.027 ton/yr

Cooling Tower Emissions

Water intake rate =	1,400 gpm
Total liquid drift =	0.001% of circulating water flow
Design circulating water rate =	68,500 gpm
Total dissolved solids (TDS) intake =	1,250 ppm
Concentration cycles =	up to 24
Circulating TDS =	30,000 lb TDS/10^6 lb H_2O
Hours of Operation =	8,760 hr/yr

PM_{10} Emissions
Calculations: 0.001 lb drift/100 lb H_2O * 68,500 gal H_2O/min * 60 min/hr * 8.34 lb/gal * 30,000 lb TDS/10^6 lb H_2O * 8760 hr/yr * 0.0005 ton/lb = 45.04 ton/yr

Baghouse and Bin Vent Emissions

Coal unloading (RCF-BH-001) flow rate =	50,000 dscfm
Coal silo (RCF-BH-002) flow rate =	7,500 dscfm
Coal storage bunkers (RCF-BH-003) flow rate =	5,000 dscfm
SDA lime silo (FGT-BV-001) flow rate =	1,000 dscfm
FGD ash silo (WMH-BV-003) flow rate =	2,000 dscfm
Recycle ash silo (FGT-BV-002) flow rate =	2,000 dscfm
Water treatment lime silo (RWS-BH-001) flow rate =	1,000 dscfm
Soda ash silo (RWS-BH-002) flow rate =	1,000 dscfm
Hours of operation =	8,760 hr/yr

PM/PM_{10} Emissions
Emission Factor: 0.01 gr/dscf {Permit limit}

RCF-BH-001 Calculations: 50,000 dscf/min * 0.01 gr/dscf * 1 lb/7000 gr * 60 min/hr * 8760 hr/yr * 0.0005 ton/lb = 18.77 ton/yr

RCF-BH-002 Calculations: 7,500 dscf/min * 0.01 gr/dscf * 1 lb/7000 gr * 60 min/hr * 8760 hr/yr * 0.0005 ton/lb = 2.82 ton/yr

RCF-BH-003 Calculations: 5,000 dscf/min * 0.01 gr/dscf * 1 lb/7000 gr * 60 min/hr * 8760 hr/yr * 0.0005 ton/lb = 1.88 ton/yr

FGT-BV-001 Calculations: 1,000 dscf/min * 0.01 gr/dscf * 1 lb/7000 gr * 60 min/hr * 8760 hr/yr * 0.0005 ton/lb = 0.38 ton/yr

WMH-BV-003 Calculations: 2,000 dscf/min * 0.01 gr/dscf * 1 lb/7000 gr * 60 min/hr * 8760 hr/yr * 0.0005 ton/lb = 0.75 ton/yr

FGT-BV-002 Calculations: 2,000 dscf/min * 0.01 gr/dscf * 1 lb/7000 gr * 60 min/hr * 8760 hr/yr * 0.0005 ton/lb =

0.75 ton/yr

RWS-BH-001 Calculations: 1,000 dscf/min * 0.01 gr/dscf * 1 lb/7000 gr * 60 min/hr * 8760 hr/yr * 0.0005 ton/lb = 0.38 ton/yr

RWS-BH-002 Calculations: 1,000 dscf/min * 0.01 gr/dscf * 1 lb/7000 gr * 60 min/hr * 8760 hr/yr * 0.0005 ton/lb = 0.38 ton/yr

Truck Traffic Fugitives

Assumptions:

Distance of each round trip = 0.5 mile
Total trips = 2 trips/hr, every hour of the year
Driving surface = paved

PM/PM_{10} Emissions (Fugitives)

Emission Factor: 0.06 lb/VMT {Calculated from AP-42 Equation, 13.2.1 (10/97)}
Calculations: 0.06 lb/VMT * 0.5 VMT/trip * 2 trips/hr *8760 hr/yr * 0.0005 ton/lb = 0.26 ton/yr

Temporary Auxiliary Boiler Emissions

Hours of Operation = 1,000 hr/yr (Permit Limit)
Heat Input = 11.8 MMBtu/hr
Maximum fuel rate = 85 gal/hr of No. 2 fuel oil

PM/PM_{10} Emissions

Emission Factor: 2 lb PM/ 1000 gal fuel {AP-42, Table 1.3-1}
Calculations: 2 lb/1000 gal fuel * 85 gal/hr * 1000 hr/yr * 0.0005 ton/lb = 0.09 ton/yr

NO_x Emissions

Emission Factor: 20 lb NOx/ 1000 gal fuel {AP-42, Table 1.3-1}
Calculations: 20 lb/1000 gal fuel * 85 gal/hr * 1000 hr/yr * 0.0005 ton/lb = 0.85 ton/yr

CO Emissions

Emission Factor: 5 lb CO/ 1000 gal fuel {AP-42, Table 1.3-1}
Calculations: 5 lb/1000 gal fuel * 85 gal/hr * 1000 hr/yr * 0.0005 ton/lb = 0.21 ton/yr

VOC Emissions

Emission Factor: 0.252 lb VOC/1000 gal fuel {AP-42, Table 1.3-3}
Calculations: 0.252 lb/1000 gal fuel * 85 gal/hr * 1000 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

SO_x Emissions

Emission Factor: 142 * S lb/ 1000 gal {Permit Limit for fuel sulfur content ≤ 0.05%}
Calculations: 142 * 0.05 lb/1000 gal * 85 gal/hr * 1000 hr/yr * 0.0005 ton/lb = 0.30 ton/yr

V. Ambient Air Quality Impacts

The plant site is located in the Northwest ¼ of Section 12, Township 1 South, Range 33 East, in Big Horn County, Montana. The air quality of this area is classified as either "Better than National Standards" or unclassifiable/attainment of the Montana and National Ambient Air Quality Standards (MAAQS and NAAQS) for criteria pollutants. The facility was modeled under Permit #3185-02 with respect to PSD and demonstrated compliance with the MAAQS, NAAQS and PSD increments. Because the temporary auxiliary boiler will not be operated simultaneously with the PC-fired Boiler combusting coal (representing worst-case emissions) and its emissions are extremely low, the Department anticipates RMP would maintain compliance with air quality standards.

VI. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Rocky Mountain Power, Inc.
Hardin Generating Station
P.O. Box 5558
Bismarck, ND 58506-5558

Air Quality Permit Number: #3185-03

Preliminary Determination Issued: December 21, 2005
Department Decision Issued: January 6, 2006
Permit Final: January 24, 2006

1. *Legal Description of Site*: RMP electrical power generating facility is located approximately 1.2 miles northeast of Hardin, Montana. The legal description of the site is the Northwest ¼ of Section 12, Township 1 South, Range 33 East, in Big Horn County, Montana. The RMP facility covers approximately 30 acres.

2. *Description of Project*: On December 20, 2005, the Department received a complete permit application from RMP to add a temporary auxiliary 11.8 million MMBtu/hr boiler necessary for startup of the PC –fired Boiler (Boiler). The temporary auxiliary boiler would be used to provide supplemental heat when the Boiler is operating on natural gas for activities such as steam blows or freeze protection during tuning or startup of the Boiler. Once startup has progressed to the point that the Boiler is fired on coal, there will be no need for the auxiliary boiler. The auxiliary boiler would not be operated at the same time the Boiler is combusting coal, therefore overall potential emissions at the facility would not increase.

3. *Benefits and Purposes (Objectives) of Project*: The temporary auxiliary boiler would be used to provide supplemental heat when the Boiler is operating on natural gas for activities such as steam blows or freeze protection during tuning or startup of the Boiler.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The no-action alternative would deny issuance of the Montana Air Quality Permit modification to RMP. Under the "no action" alternative, RMP would not be able to install the temporary auxiliary boiler; therefore, hindering startup activities. However, the Department does not consider the "no-action" alternative to be appropriate because RMP demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions would be included in Permit #3185-03.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and would not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no action" alternative was discussed previously.

Potential Physical and Biological Effects							
		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Terrestrial and Aquatic Life and Habitats			✓			yes
B.	Water Quality, Quantity, and Distribution			✓			yes
C.	Geology and Soil Quality, Stability, and Moisture			✓			yes
D.	Vegetation Cover, Quantity, and Quality			✓			yes
E.	Aesthetics			✓			yes
F.	Air Quality			✓			yes
G.	Unique Endangered, Fragile, or Limited Environmental Resources			✓			yes
H.	Demands on Environmental Resources of Water, Air, and Energy			✓			yes
I.	Historical and Archaeological Sites			✓			yes
J.	Cumulative and Secondary Impacts			✓			yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

The impacts from this project to terrestrial and aquatic life and habitats would be minor because the temporary auxiliary boiler would be constructed/installed on an already disturbed area of the facility. With respect to impacts from air emissions on terrestrial and aquatic life and habitats from the temporary auxiliary boiler, the emissions from each criteria pollutant (NO_x, for example) would be limited to less than 1 ton per year. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. Therefore, the cumulative impact would be negligible.

B. Water Quality, Quantity, and Distribution

Water quality, quantity, and distribution would not be affected by the proposed installation of the temporary auxiliary boiler as it would not increase water use on the RMP site. With respect to impacts from air emissions on water quality, quantity, and distribution from the temporary auxiliary boiler, the emissions would be extremely low and would have little, if any effect, on water quality. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. Therefore, the cumulative impact would be negligible.

C. Geology and Soil Quality, Stability, and Moisture

The impacts from this project to geology and soil quality, stability, and moisture would be minor because the temporary auxiliary boiler would be constructed/installed on an already disturbed area of the facility. With respect to impacts from air emissions on geology and soil quality, stability, and moisture from the temporary auxiliary boiler, the emissions would be extremely low and would have little, if any effect, on geology and soils. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. Therefore, the cumulative impact would be negligible.

D. Vegetation Cover, Quantity, and Quality

The impacts from this project to vegetation cover, quantity, and quality would be minor because the temporary auxiliary boiler would be constructed/installed on an already disturbed area of the facility. With respect to impacts from air emissions on vegetation cover, quantity, and quality from the temporary auxiliary boiler, the emissions would be extremely low and would have little, if any effect, on vegetation. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. Therefore, the cumulative impact would be negligible.

E. Aesthetics

The impacts to the aesthetics of the area from the installation of the temporary auxiliary boiler would be minor because it would be located inside the existing plant site and would only operate for a maximum of 1000 hours per year.

F. Air Quality

The air quality impacts of the proposed temporary auxiliary boiler would be minor because it is a very small unit, the emissions from each criteria pollutant (NO_x, for example) would be limited to less than 1 ton per year, and it would be prohibited from operating when the PC-fired Boiler was combusting coal. The air quality modeling analysis performed for Permit #3185-02 showed compliance with the NAAQS, MAAQS, and PSD increment. The addition of this unit would not affect this analysis because emissions during startup from the PC-fired Boiler burning natural gas with the temporary auxiliary boiler burning No. 2 fuel oil would still be far less than worst-case emissions modeled (with the PC-fired Boiler combusting coal at maximum capacity).

G. Unique, Endangered, Fragile, or Limited Environmental Resources

For the original permitting action (#3185-00), the Department contacted the Montana Natural Heritage Program of the Natural Resource Information System (NRIS) to identify any species of special concern in the immediate area of the RMP project. The Natural Heritage Program files identified four species of special concern in the 1-mile buffer area surrounding the section, township, and range of the RMP facility. The four animal species identified were the *haliaeetus leucocephalus* (bald eagle), *heterodon nasicus* (western hognose snake), *sorex merriami* (merriam's shrew), and *sorex preblei* (preble's shrew). A bald eagle nest is estimated to be located approximately 0.5-mile north-northeast of the property boundary for the RMP site. A western hognose snake was sighted approximately 2 miles southwest of the RMP site. The sightings of merriam's shrew and preble's shrew are historic sightings (both dated 1884) located approximately 2.5 miles southeast of the RMP site. None of the species identified were located within the same section, township, and range of the RMP site.

The impacts from this project to unique, endangered, fragile, or limited resources would be minor because the temporary auxiliary boiler would be constructed/installed on an already disturbed area of the facility. With respect to impacts from air emissions on unique, endangered, fragile, or limited resources from the temporary auxiliary boiler, the emissions would be extremely low and would have little, if any effect, on geology and soils. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. Therefore, the cumulative impact would be negligible.

To determine the impact on the bald eagle population for previous permitting actions, the Department consulted the U.S. Department of Interior, Bureau of Reclamation Montana Bald Eagle Management Plan (MBEMP). With the identified nest being slightly more than 0.5 mile away from the RMP property boundary, the RMP site would fall into a MBEMP "Zone III" Classification, representing home range for the bald eagles. Zone III is classified as the area from 0.5 mile to 2.5 miles in radius from the nest site (Zone II from 0.25 to 0.5 miles, Zone I from 0 to 0.25 miles). Zone III represents most of the home range used by eagles during nesting season, usually including all suitable foraging habitat within 2.5 miles of all nest sites in the breeding area that have been active within five years. The objectives in Zone III areas include maintaining suitability of foraging habitat, minimizing disturbance within key areas, minimizing hazards, and maintaining the integrity of the breeding area. The nest is located in a group of cottonwood trees located in the marshy area next to the Bighorn River. That area would remain unchanged by the facility operation, except for a possible cumulative moderate impact by air pollutants (by the facility as a whole), as described in Section 7.F of this EA. The proposed change would probably not impact the nest area at all, as emissions would be so low and the temporary auxiliary boiler is limited to operating not more than 1000 hours per year. Therefore, the impact on bald eagles would be minor.

RMP would be responsible for compliance with any applicable statutes and regulations, including the Bald Eagle Protection Act, the Migratory Bird Treaty Act, and the Endangered Species Act.

The proposed project would have a minor impact on limited, non-renewable resources because the temporary auxiliary boiler would use a maximum of 8500 gallons of No. 2 fuel oil per year, which was not a resource previously being consumed on the plant site.

H. Demands on Environmental Resource of Water, Air, and Energy

As described in Section 7.B of this EA, demands on water resources would not be affected by the installation of the temporary auxiliary boiler as it would not increase water use on the RMP site.

As described in Section 7.F of this EA, the impact on the air resource in the area from the temporary auxiliary boiler would be minor because it is a very small unit, the emissions from each criteria pollutant would be limited to less than 1 ton per year, and it would be prohibited from operating when the PC-fired Boiler was combusting coal.

The impacts to the energy resource from the proposed modification would be minor because a small amount of No. 2 fuel oil (maximum of 8500 gallons per year) would potentially be consumed to operate the temporary auxiliary boiler.

I. Historical and Archaeological Sites

The impacts on historical and archaeological sites would be minor because the temporary auxiliary boiler would be constructed/installed on an already disturbed area of the facility.

During the analysis for Permit #3185-00, the Department contacted the Montana Historical Society – State Historic Preservation Office (SHPO) in an effort to identify any historical, archaeological, or paleontological sites or findings near the proposed project. SHPO's records indicate that there are currently no previously recorded cultural properties within the project site. Because of the fact that industrial activities and land disturbances have occurred in the area, SHPO commented that the likelihood of finding undiscovered or unrecorded historical properties is practically zero. SHPO further commented "a recommendation for a cultural resource inventory is unwarranted at this time."

J. Cumulative and Secondary Impacts

Overall, the cumulative impacts from this modification on the physical and biological aspects of the human environment would be minor. The potential emissions from the temporary auxiliary boiler would be extremely low and would have little effect on the physical and biological aspects of the human environment. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. Therefore, the cumulative impact would be negligible.

8. The following table summarizes the potential social and economic effects of the proposed project on the human environment. The "no action" alternative was discussed previously.

Potential Social and Economic Effects							
		Major	Moderate	Minor	None	Unknown	Comments Included
A.	Social Structures and Mores				✓		yes
B.	Cultural Uniqueness and Diversity				✓		yes
C.	Local and State Tax Base and Tax Revenue				✓		yes
D.	Agricultural or Industrial Production			✓			yes
E.	Human Health			✓			yes
F.	Access to and Quality of Recreational and Wilderness Activities				✓		yes
G.	Quantity and Distribution of Employment				✓		yes
H.	Distribution of Population				✓		yes
I.	Demands for Government Services			✓			yes
J.	Industrial and Commercial Activity				✓		yes
K.	Locally Adopted Environmental Plans and Goals				✓		yes
L.	Cumulative and Secondary Impacts			✓			yes

SUMMARY OF COMMENTS ON POTENTIAL SOCIAL AND ECONOMIC EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores

The proposed installation of the temporary auxiliary boiler at the RMP facility would not cause a disruption to any native or traditional lifestyles or communities (social structures or mores) in the area because proposed installation would occur within the RMP site and would not change the nature or use of that site. The proposed installation would be consistent with the RMP facility and the former and current use of the industrial park surrounding the facility. The proposed installation would also not affect the greater surrounding area (predominately agricultural and/or associated with the outskirts of the City of Hardin).

B. Cultural Uniqueness and Diversity

The proposed installation of the temporary auxiliary boiler at the RMP facility would not cause a disruption to any cultural uniqueness or diversity in the area because proposed installation would occur within the RMP site and would not change the nature or use of that site. The proposed installation would be consistent with the RMP facility and the former and current use of the industrial park surrounding the facility. The proposed installation would also not affect the greater surrounding area.

C. Local and State Tax Base and Tax Revenue

The proposed installation of the temporary auxiliary boiler would have no effect on the state tax base and tax revenue because it would not change the amount of taxes owed by the RMP facility.

D. Agricultural or Industrial Production

The impact from the proposed temporary auxiliary boiler on agricultural production would be minor because the emissions would be extremely low and would have little, if any effect, on vegetation and soils. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. The temporary auxiliary boiler is proposed to be installed within an existing industrial site, and would not be taking agricultural land out of production. With respect to industrial production, the proposed temporary auxiliary boiler would be assisting the RMP facility in startup activities associated with the PC-fired Boiler. Therefore, the impact on industrial production would be minor.

E. Human Health

As described in Section 7.F of the EA, the air quality impacts (and therefore, the human health impacts) of the proposed temporary auxiliary boiler would be minor because it is a very small unit, the emissions from each criteria pollutant (NO_x, for example) would be limited to less than 1 ton per year, and it would be prohibited from operating when the PC-fired Boiler was combusting coal. The air quality modeling analysis performed for Permit #3185-02 showed compliance with the NAAQS, MAAQS, and PSD increment. The addition of this unit would not affect this analysis because emissions during startup from the PC-fired Boiler burning natural gas with the temporary auxiliary boiler burning No. 2 fuel oil would still be far less than worst-case emissions modeled (with the PC-fired Boiler combusting coal at maximum capacity).

F. Access to and Quality of Recreational and Wilderness Activities

The proposed installation of the temporary auxiliary boiler at the RMP facility would not affect access to and quality of recreational and wilderness activities because the boiler would be installed within an existing industrial site with extremely low potential emissions. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. Therefore, the cumulative impact would be negligible.

G. Quantity and Distribution of Employment

There would be no effect on the employment of the area from the proposed installation of the temporary auxiliary boiler, as no new employees would be hired as a result of the project.

H. Distribution of Population

There would be no effect on the distribution of population in the area from the proposed installation of the temporary auxiliary boiler, as no new employees (thus no change in population moving in) would be hired as a result of the project.

I. Demands of Government Services

Demands on government services from the proposed installation of the temporary auxiliary boiler would be minor because the project would require some, but not extensive, government services. RMP would remain a tax paying entity for both state and local tax bases.

The acquisition of the appropriate permits by the facility for the proposed installation (including a state air quality permit), the permits for the associated activities of the project, and compliance verification with those permits would also require minor services from the government.

J. Industrial and Commercial Activity

The proposed installation at the RMP facility would represent no change in industrial activity in the area. The installation of the temporary auxiliary boiler would only assist the facility in starting up the PC-fired Boiler. The facility, as previously permitted, would operate 24 hours a day and 7 days per week generating electricity. Other industrial activity in the area includes the Cenex bulk storage facility, just south of the proposed RMP site.

K. Locally Adopted Environmental Plans and Goals

The nearest nonattainment areas with respect to air quality are the Laurel SO_2 Nonattainment Area and associated SO_2 state implementation plan area (including Billings, approximately 45 miles to the west) and the Lame Deer PM_{10} Nonattainment Area (approximately 46 miles to the east). Based on the air quality modeling performed for Permit #3185-02, the RMP project as a whole would not significantly impact either of those nonattainment areas and therefore, would have no effect on any locally adopted environmental goals and plans associated with those two areas. As previously described, the emissions during startup (when the proposed temporary auxiliary boiler would be used), would be far less than the "worst-case" emissions modeled for the RMP project.

The Department is unaware of any other locally adopted environmental plans and goals that would be affected by the proposed modification of the RMP facility.

L. Cumulative and Secondary Impacts

Overall, the cumulative and secondary impacts from this project on the social and economic aspects of the human environment would be very minor. The proposed temporary auxiliary boiler would be installed within the existing RMP facility and emissions from it would be extremely low. In addition, the temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal. Therefore, the cumulative impact would be negligible.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The proposed project is for a very small emissions source that would be located within an existing industrial facility. In addition, the proposed temporary auxiliary boiler would be prohibited from operating when the PC-fired Boiler was combusting coal, therefore protecting the worst-case air quality modeling analysis. Overall impacts will be very minor.

Other groups or agencies contacted or that may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System - Montana Natural Heritage Program, Montana Department of Revenue

Individuals or groups contributing to this EA: Department of Environmental Quality (Air Resources Management Bureau; Air, Energy, and Pollution Prevention Bureau; and Water Protection Bureau), Montana Historical Society – State Historic Preservation Office; Natural Resource Information System - Montana Natural Heritage Program; Department of Revenue

EA prepared by: Debbie Skibicki
Date: December 20, 2005